This document presents an example of the deliverable due for the Database Design Project assignment. Most of the steps and sub-steps present an example of what you should provide in your project deliverable. Some of the steps and sub-steps (sub-step 1.4, for example) provide an explanation of what, if anything, you need to develop. You can easily distinguish an example from an explanation; explanations are written in *itlaics.*

Step 1: Create and check the E-R model

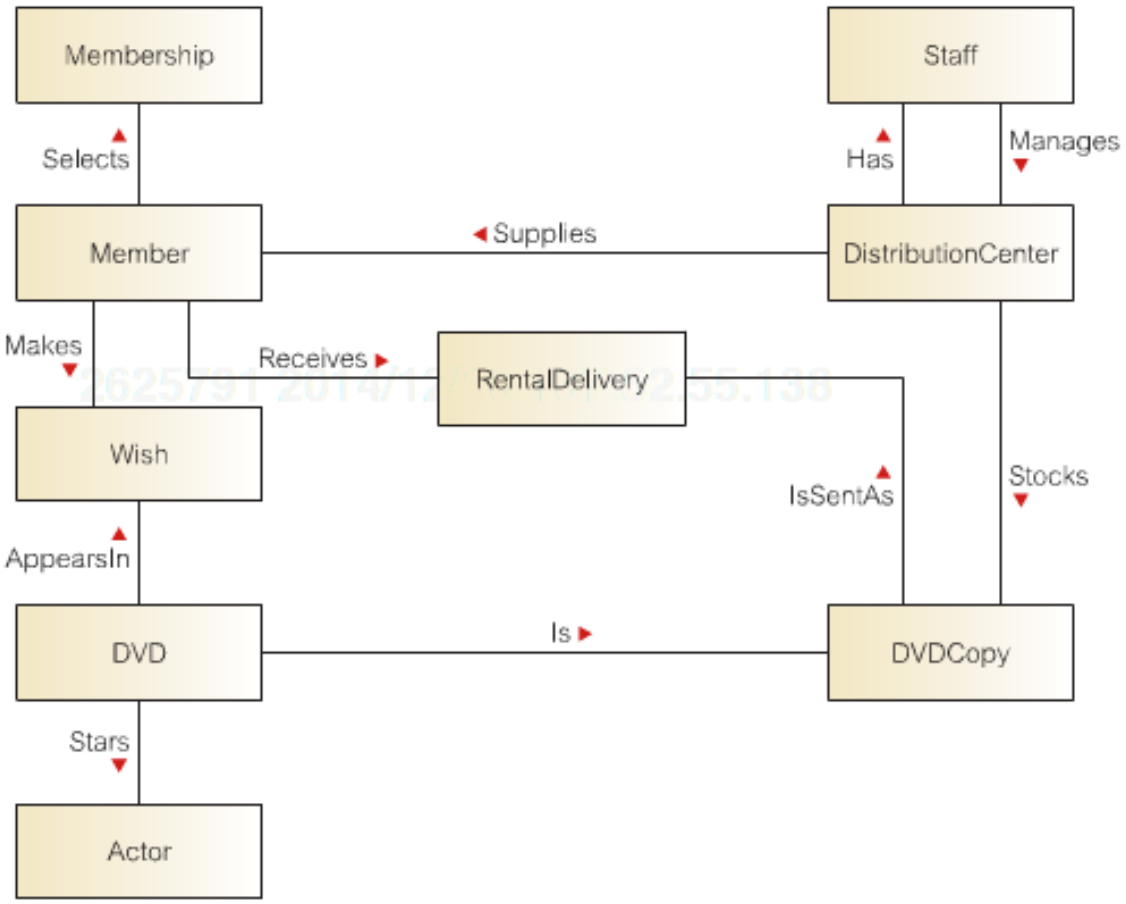
1.1 Identify entities

Entity	Description
Actor	All performers, as listed on the DVD package
DVD	Information regarding the movie
Member	Information regarding the club members
RentalDelivery	Information that connects the Member information to the DVD being rented
Wish	Information regarding DVDs that the member would like to rent in the future
DistributionCenter	Information about the company location – can be either a storefront or a warehouse
DVDCopy	Specific copy of a DVD – any DVD can exist in many copies in the inventory
MembershipType	List and description of the different types of membership available through the club
Staff	Information relevant to the club employees

An ER Diagram with relationship and crows feet linking each entity table is needed, the primary and foreign keys have to be indicated and all attributes listed

1.2 Identify relationships

Entity	Relationship	Entity
DistributionCenter	Stocks	DVDCopy
DistributionCenter	Supplies	Member
DistributionCenter	Has	Staff
DVD	Stars	Actor
DVD	Is	DVDCopy
DVD	AppearsIn	Wish
DVDCopy	IsSentAs	RentalDelivery
Member	Selects	MembershipType
Member	Makes	Wish
Member	Receives	RentalDelivery
Staff	Manages	DistributionCenter

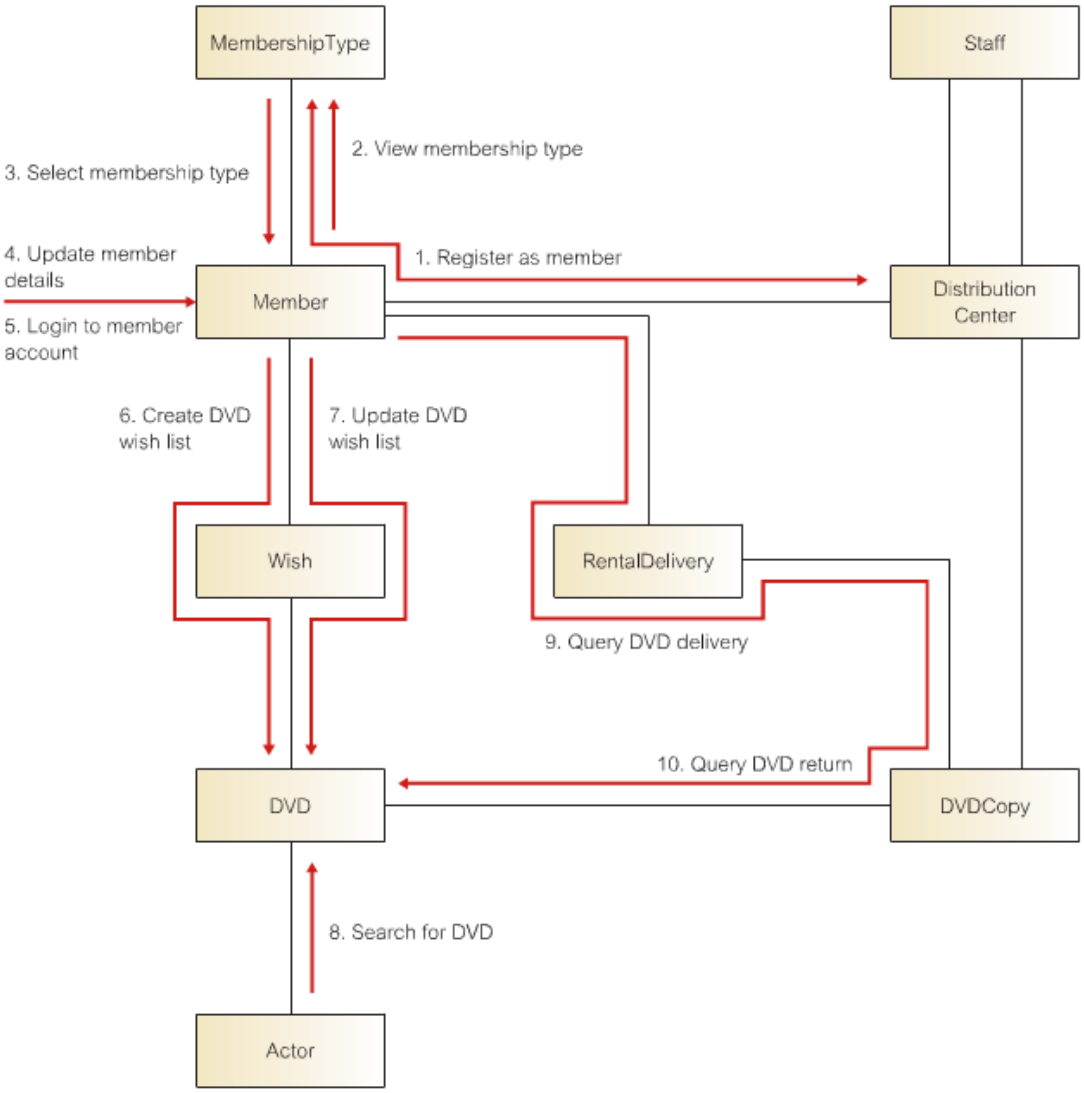


1.3 Identify and associate attributes with entities, identifying attribute domains and primary keys

Entity	Attribute Name	Description	Data type and length	Nulls	Multi-valued
Distribution Center	dCenterNo**	Uniquely identifies each distribution center	4 fixed characters	No	No
	dStreet	Street location of distribution center	60 variable characters	No	No
	dCity	City location of distribution center	20 variable characters	No	No
	dState	State location of distribution center	20 variable characters	No	No
	dZipCode	ZipCode location of distribution center	5 variable characters	No	No
Staff	staffNo **	Uniquely identifies each member of staff	5 fixed characters	No	No
	name	Full name of member of staff	30 variable characters	No	No
	position	Position of a member of staff	10 variable characters	No	No
	salary	Salary of member of staff	Currency US dollars	No	No
	eMail	email address of member of staff	50 variable characters	No	No

** Primary key

1.4 Check that the model supports user transactions


MembershipType
Staff
3. Select membership type
2. View membership type
4. Update member details
1. Register as member
Member
Distribution Center
5. Login to member account
6. Create DVD wish list
7. Update DVD wish list
Wish
RentalDelivery
9. Query DVD delivery
10. Query DVD return
DVD
DVDCopy
8. Search for DVD
Actor

Step 2 Map the E-R model to tables

2.1 Create tables

Actor (actorNo, actorName) **Primary key** actorNo	**DVDActor** (actorNo, catalogNo, character) **Primary key** actorNo, catalogNo **Foreign key** actorNo **Foreign key** catalogNo
DistributionCenter (dCenterNo, dStreet, dCity, dState, dZipCode, mgrStaffNo) **Primary key** dCenterNo **Alternate key** dZipCode **Foreign key** mgrStaffNo (original name is staffNo)	**DVD** (catalogNo, title, genre, rating) **Primary key** catalogNo
DVDCopy (DVDNo, catalogNo, available, dCenterNo) **Primary key** DVDNo **Foreign key** catalogNo **Foreign key** dCenterNo	**DVDRental** (deliveryNo, DVDNo, dateReturn) **Primary key** deliveryNo, DVDNo **Alternate key** DVDNo, dateReturn **Foreign key** DVDNo **Foreign key** deliveryNo
Member (memberNo, mFName, mLName, mStreet, mCity, mState, mZipCode, mEMail, mPword, mTypeNo, dCenterNo) **Primary key** memberNo **Alternate key** mEMail **Foreign key** mTypeNo **Foreign key** dCenterNo	**MembershipType** (mTypeNo, mTypeDesc, maxRentals, monthlyCharge) **Primary key** mTypeNo **Alternate key** mTypeDesc
RentalDelivery (deliveryNo, memberNo dateOut) **Primary key** deliveryNo **Foreign key** memberNo	**Staff** (staffNo, name, position, salary, eMail, dCenterNo) **Primary key** staffNo **Alternate key** eMail **Foreign key** dCenterNo
Wish (memberNo, catalogNo, ranking) **Primary key** memberNo, catalogNo **Foreign key** memberNo **Foreign key** catalogNo	

2.2 Check table structures using normalization

Make modifications to the table from stem 2.1 to bring all tables in third normal form compliance.
Reproduce the entire table, including all tables, whether the table was modified or not.

2.3 Check that the tables support user transactions

Transaction	Table(s) required	Column(s) required (in bold)
1. Register as member	Member	(memberNo, mFName, mLName, mStreet, mCity, mState, mZipCode, mEMail, mPword, mTypeNo, dCenterNo)
2. View membership type	MembershipType	(mTypeNo, mTypeDesc, maxRentals, monthlyCharge)
3. Select membership type	Member	(memberNo, mFName, mLName, mStreet, mCity, mState, mZipCode, mEMail, mPword, mTypeNo, dCenterNo)
	MembershipType	(mTypeNo, mTypeDesc, maxRentals, monthlyCharge)

2.4 Check that integrity constraints are addressed

Document that all integrity constraints are considered in the design. Be sure to address Domain, Entity, and Referential integrity constraints

Step 3 Select database management system

For this step, you do not actually implement a database. You do need to make a decision regarding the database management system(DBMS) you would select for implementation (i.e. Oracle, Microsoft SQL Server, Microsoft Access, MySQL, etc.). As a deliverable for this step, you will need to provide a discussion of the DBMS you would select. Your discussion must include:

1. *Identify the DBMS selected*
2. *Identify the alternative DBMS(s) (you must consider at least two DBMSs) considered.*
3. *Discussion of the rational for the DBMS selected, including*
    a. *The strengths identified for the DBMS selected*
    b. *The strengths identified for the DBMS(s) not selected*
    c. *The weaknesses identified for the DBMS selected*
    d. *The weaknesses identified for the DBMS(s) not selected*

This discussion is not intended to be a major research project. Three or four double-spaced pages should be fully adequate to meet the requirements. Be sure to cite the sources you use to support your recommendation.